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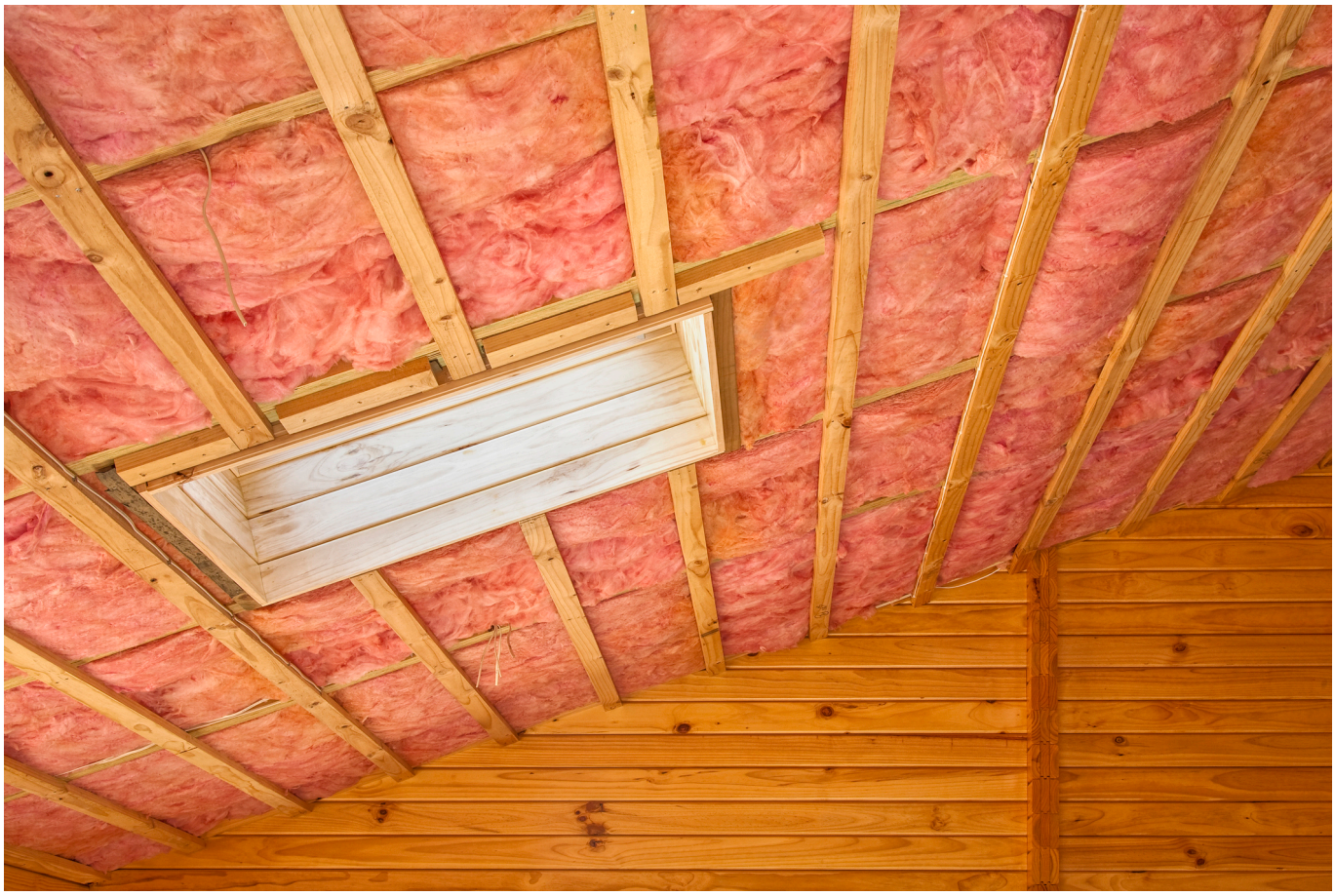

New Zealand’s hard-won improvements to our Building Code must be retained: Here’s why

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Summary

It has recently been reported that the Government is considering reducing the thickness of insulation required in new homes. This would mean rolling back the building code standards that were brought in last year after extensive consultation and with almost universal support. Manufacturing has been geared around the new standards, but the cost of a rollback would not just affect industry, it will impact energy savings and health. In this Briefing, we lay out the evidence for retaining hard-won improvements to the Building Code.

In 2023 new Building Code insulation standards were implemented following intensive consultation and buy-in. Housing and Building Minister Chris Penk has asked the Ministry of Business, Innovation and Employment (MBIE) to work towards rolling back the new standards. The impact of such a move would be far-reaching and go against evidence.

What does insulation do?

Housing insulation prevents heat transfer, in either direction, through the building envelope. It complements heating, good design, and ventilation to maintain our indoor environment, keeping us warm in winter, and cool in summer. Insulating our homes well is a key part of how we adapt to increasing extremes of heat and cold brought by accelerating climate change.

In the winter, insulation keeps warmth inside the home, with MBIE advice reporting homes meeting the new Code will need 40% less heating than older homes.[1]

Insulation does not cause overheating. However poor design - poor orientation of windows, lack of external shading, and inadequate ventilation - can certainly do so.

Introduction of the new levels

The current “H1” building code standards were introduced after extensive and exhaustive consultation. The consultation began in 2021 and MBIE reported more submissions on the proposed changes than the combined total for other submissions on other code changes in the previous five years.[1] Over a third of the submissions came from building owners, occupants and renters who had experience of living in buildings built to previous standards. Many of the submissions also came from builders, designers, community trusts and researchers. There was almost universal support, 98%, for increased standards.

Increasing the thickness of insulation meant that there would have to be changes in the manufacturing of insulation materials. There would be necessary change-over costs, but

these were considered worthwhile for improving the housing standards. A Building Research Association of New Zealand (BRANZ) analysis including health, carbon and other elements found a positive cost benefit.[2]

The initial plan was for a one-year transition time to the new standards, however it was extended by six months to give the sector time to implement necessary changes.[3] Industry has since invested in manufacturing and stock to meet the new code.

Reversing these changes would take our insulation standards back to about half or even less of the levels required in Australia[4], Ireland[5], or the UK.[6] In our warmer regions, the new requirements for walls and under most floors are still less than the minimum requirements in Sydney or Melbourne – where more insulation is required under dark-coloured roofs – which absorb heat from the sun – than under light-coloured roofs, which reflect it.

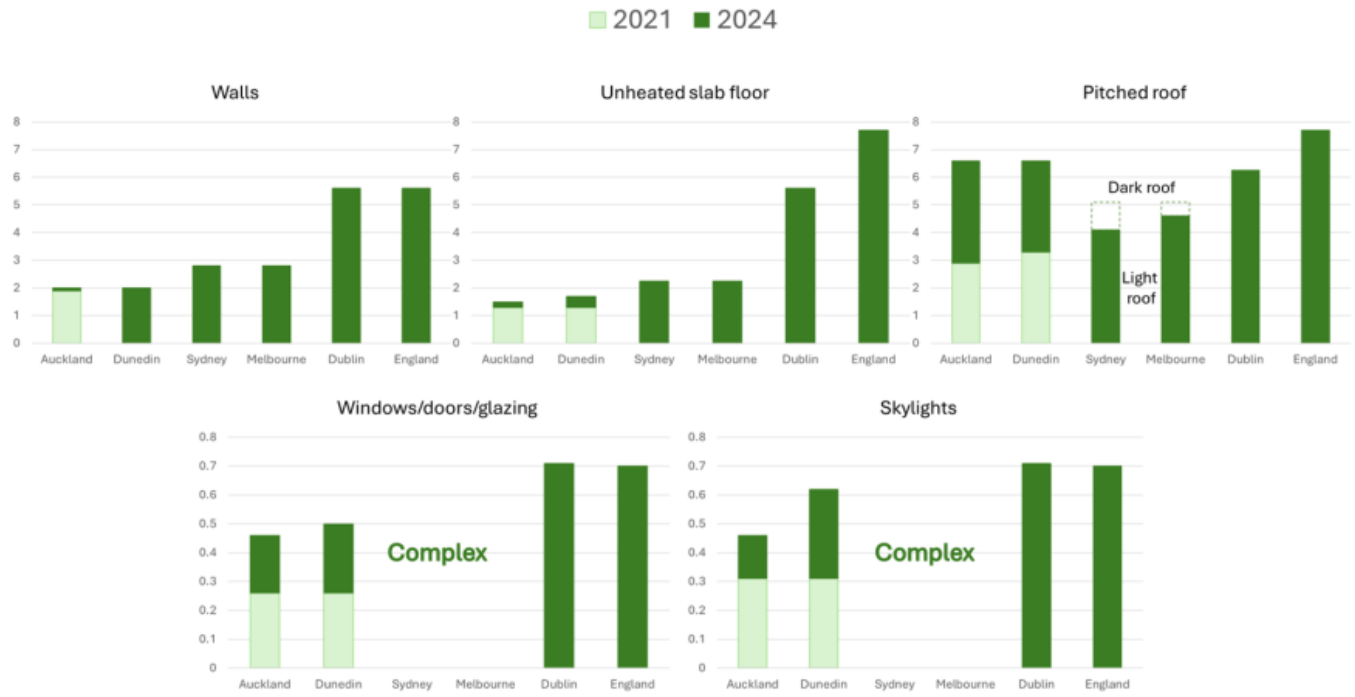

Figure 1. Minimum R-values (measure of how well a product prevents heat transfer) for different building elements in New Zealand and comparable climate locations.

What will an insulation rollback cost us?

There is a 20-year history of solid research in Aotearoa New Zealand showing that it's not only energy efficiency that's improved by insulation, but also our health[7-10] , with the benefits of insulation outweighing its costs[11 12].

This research informed the World Health Organization's International Housing and Health Guidelines[13], and the Healthy Homes Standards for residential tenancies; and sustained the Warm-Up NZ insulation subsidy programme through successive governments.

The extra home warmth which insulation retains in winter reduces illness, days off school and work[14 15], pharmaceutical prescriptions, hospitalisations, and mortality[16-20], with a death prevented per year for every 1000 New Zealand homes insulated. Insulation also reduces outdoor noise, improving sleep quality.[21] Warmer homes have less condensation, dampness and mould[22], and so less related damage to building materials, furnishings and clothing, and health.[23-25]

Less insulation means more health sector costs and lower productivity. Even a top-up to existing insulation provides health benefits that make the top-up worthwhile. The health and social benefits of insulation are nearly six times greater than the cost of the insulation.

When we build homes in New Zealand they tend to stay up for a long time – half our building stock is more than 45 years old, and so built before insulation was required at all. Previous increases to required insulation since the 1970s did little to reduce required heating energy in an average dwelling.[26] BRANZ estimates we demolish less than 0.2% of our housing stock each year.[27] The best and cheapest time to install insulation for the lifetime of that dwelling is when it's being built.

BRANZ research also shows homes built to H1 save 3 to 13 tonnes of carbon per house, contributing to the carbon emission reductions needed to help stabilise the climate and meet government climate targets.[2]

With insulation saving up to hundreds of dollars per home per year on heating and cooling costs, insulation is an important contribution not only to energy and carbon saving, but to household budgets[28] and our future prosperity.

Conclusion

The most basic function of a home is to provide shelter from the elements. In New Zealand, we're still working out the best ways to make our homes do that. One thing we can be sure of, though, is that making them harder and more expensive to heat in winter, by reducing insulation, is not the solution to summer overheating.

What this Briefing adds

- Current H1 building code standards had almost universal support from scientists, industry, and consumers.
- There is extensive evidence for both the broad health benefits and cost savings of improved insulation.
- Current H1 standards are still less than in the UK, Australia and Ireland across most building elements.

Implications for policy and practice

- We recommend current H1 standards be retained to preserve their health and economic benefits.

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